

Impact of Levees on Mapping Flood Risk and the National Flood Insurance Program

August 2007



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Overview

- Brief Background of the NFIP
- Flood Risk Mapping – Flood Insurance Rate Maps – (FIRMs)
- Map Modernization – Digital FIRMS (DFIRMS)
- Levee Policy Implementation



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NFIP

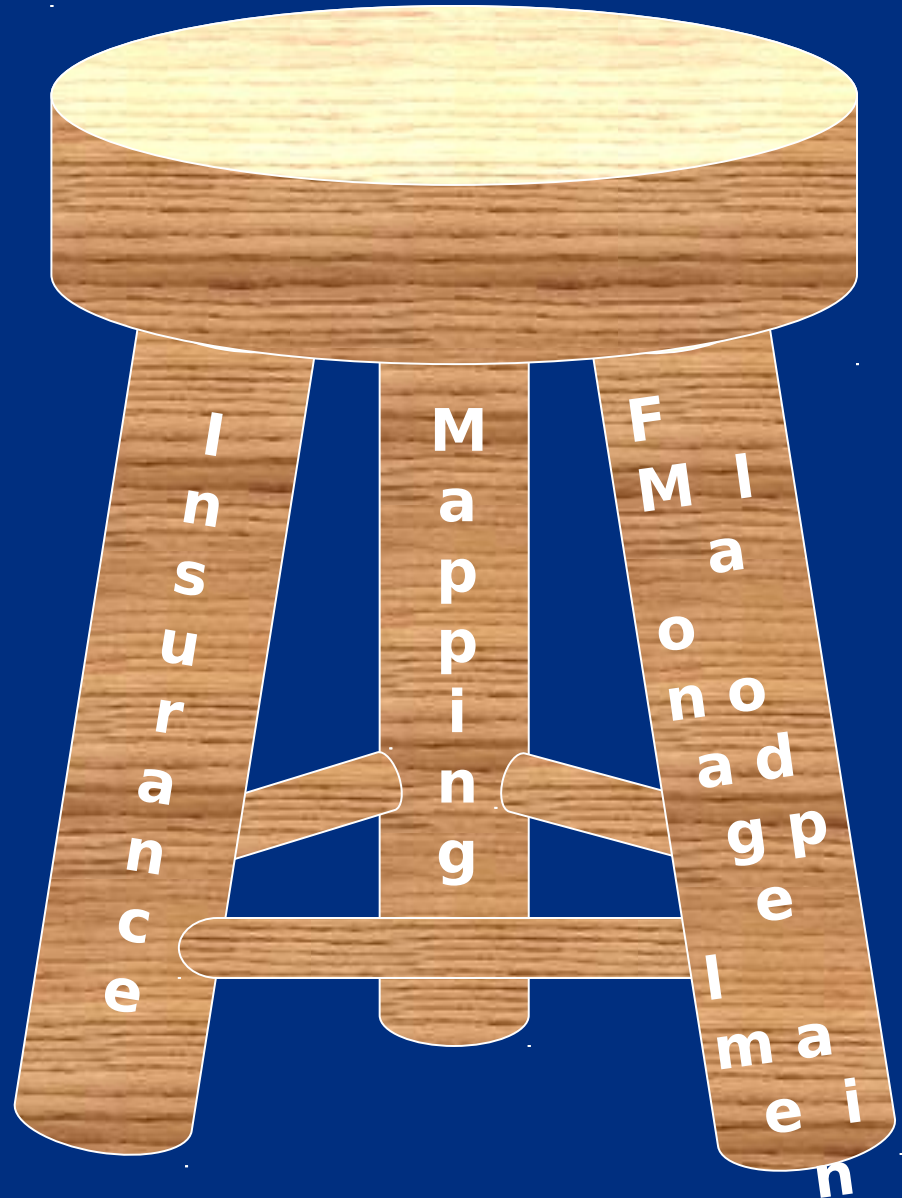
- Began in 1968
- Agreement between Federal government and local communities
- Provides flood insurance coverage on buildings in communities that participate by enforcing minimum floodplain management regulations



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NFIP

- Three key components
 - Flood risk mapping
 - Insurance
 - Floodplain management



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Flood Risk Mapping

- Many FIRMS published in late 1970's and 1980's.
- FIRMS identify floodplains subject to “Base Flood” inundation
- These maps recognized existing levees that met certification standards
- 1986 – FEMA regulations incorporated criteria for “Mapping Areas Protected by Levee Systems” (44 CFR 65.10)

Flood Risk Mapping

- While levees reduce the chance of flooding from certain designed events, no levee completely eliminates the risks associated with flooding
- Levees are designed to provide a specific level of protection and can be overtopped or fail during flood events that exceed the design storm
- Levees decay over time; therefore they require regular and proper maintenance and periodically must be upgraded to retain their level of protection.



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Map Modernization

- Multi-year, \$1 billion effort to modernize and update the Nations flood maps – paper maps to digital products
 - Includes identifying *current* risks in areas protected by levees.
- Goals: Provide up-to-date, accurate flood risk information to the public
- *Promote and enhance public safety*
- Provide data so communities and individuals can make informed risk management decisions



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FEMA Levee Responsibilities

- Spelled out in 44 CFR Section 65.10 and include:
 - Determine and establish appropriate risk zone designations in areas behind levees – reflect those determinations on FIRMs
 - Establish mapping standards (design, operations, and maintenance criteria) to ACCREDIT levees that provide at least 1-percent-annual-chance flood protection



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FEMA Levee Review Responsibilities

- Some levees shown on effective FIRM maps have never been evaluated for compliance with the 1986 certification criteria
- FEMA & USACE are working together (with other partners) to make sure that FIRMs clearly and accurately represent flood risks posed to areas situated behind levees
- If a levee cannot be accredited, it cannot be shown as providing flood protection and more flood risk area will be identified



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FEMA is not authorized to:

- Implement or fund the design, construction, certification, operation, or maintenance of levees or levee systems
- Inspect or evaluate levees or levee systems
- Determine how an individual structure or system will perform during a flood event or provide the funding for such a determination
- *FEMA Does Not Certify Levees*



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Levee Accreditation

- The effort to identify risk levels behind levees depends on FEMA receiving appropriate certification data and documentation (44 CFR Section 65.10) from those who own and operate the levees.
- Without required data and documentation, FEMA cannot accredit the levee or levee system as providing protection.
- If the levee or levee system is not accredited, the area behind the levee that is subject to inundation will be shown as a Special Flood Hazard Area (SFHA).



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Community/Levee owners Responsibilities

- If a community or levee owner want the areas behind a levee or levee system to be shown as protected from the base flood, they must provide documentation to show that the levee meets design, construction, operations, and maintenance standards for 1-percent-annual-chance flood protection.
- FEMA Procedure Memo 34 issued mid-August 2005



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Community/Levee owners Responsibilities

- Submit data and certifications to FEMA in accordance with 44 CFR Section 65.10
- Assure levees are properly operated and maintained as they were designed
- Recognize and communicate risks to citizens living and working behind levees
- Promote public safety and wise risk management decision making at the local level



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State's Role

- Illinois DNR – Regulates construction and modification of levees in the state and coordinates the NFIP
- Illinois EMA – coordinates the development of local emergency operations plans and the state plan for supplementing local resources when needed



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3 Levee Mapping Categories - 1

1. Accredited Levees - If a levee meets the criteria and the necessary data and documentation are provided to FEMA, the FIRM will show the area behind the levee as protected from the base flood and it will be mapped as a moderate-risk zone.

Area protected on FIRM/DFIRM – shaded Zone X (area of low to moderate risk)



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Accredited Levees

Note on Map for Accredited levee:

WARNING! This area is shown as being protected from the 1-percent-annual-chance flood hazard by levee, dike, or other structure. Overtopping or failure of this structure is possible, which could result in destructive flood elevations and high-velocity floodwaters. There is a chance that large floods will occur that are greater than the level of protection provided by the levee. Communities should issue evacuation plans and encourage property owners behind these structures to purchase flood insurance, even if the structure is currently shown as providing protection for the 1-percent-annual-chance flood.



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3 Levee Mapping Categories - 2

2. Provisionally Accredited Levees (PAL) - If community officials and levee owners reasonably believe a levee system provides protection from the base flood but documentation is not promptly available, this interim designation will allow up to two years for communities to submit documentation and levee certification to FEMA.

Area protected by levee on DFIRM will be mapped as shaded Zone X



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Provisionally Accredited Levee

Note on Map: Warning: Provisionally Accredited Levee.
For explanation, see the Notes to Users.

WARNING, this levee, dike, or other structure has been provisionally accredited and mapped as providing protection from the 1-percent-annual-chance flood. To maintain accreditation, the levee owner or community is required to submit documentation necessary to comply with 44 CFR Section 65.10 by (*insert agreement date*). Because of the risk of overtopping or failure of the structure, communities should take proper precautions to protect lives and minimize damages in these areas, such as issuing an evacuation plan and encouraging property owners to purchase flood insurance.



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3 Levee Mapping Categories - 3

3. If the levee does not meet the regulatory protection criteria of 44 CFR Section 65.10, then the FIRM will show the area behind the levee as a high-risk zone, or SFHA.

The area of inundation will be shown as a Zone A or AE



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Need for Levee Review

- FEMA's Map Modernization process is resulting in the need to evaluate *current* level of protection provided by FEMA accredited levees.
- For levees in the federal system FEMA relies on the expertise of the USACE and the levee inventory they are developing to determine the appropriate flood risk designation to use in re-mapping flood risk on the FIRM – information for the inventory is coordinated with local community and levee owners.
- For levees not in the federal system, FEMA will coordinate with the impacted community and the levee owner.



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Coordination with the USACE

- All Procedural Guidance issued to date by FEMA's Headquarters has been coordinated with the USACE
- For levees in the federal system FEMA is coordinating all decisions regarding potential for Provisional Accreditation status with the USACE
- This meeting reflects the FEMA/USACE coordination taking place across the nation



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What this means for communities

- FEMA is working very closely with the USACE to obtain their expert evaluation of levees in the federal system.
- Communities and levees owners in counties in DFIRM production will soon be discussing the status of levees within their jurisdiction.
- Bottom line: If levees do not provide the level of protection required for accreditation, they cannot be identified on FIRM maps as providing protection.



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3 Levee Mapping Categories

3. If the levee does not meet the regulatory protection criteria of 44 CFR 65.10, the FIRM will show the area behind the levee as a high-risk zone, or SFHA.

FEMA CANNOT accredit levees in this category

Levees in St. Clair and Madison Counties in this category:

Fish Lake, Prairie Du Pont, Metro East Sanitary District, Chain of Rocks, and Wood River



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Impacts of De-Accreditation

1. The area currently shown as being protected from Mississippi River flooding – will now be Special Flood Hazard Area (~ to Bluff Road).
2. Federally regulated lenders will require the purchase of flood insurance (~150K additional people in SFHA).
3. Local Floodplain management regulations will regulate “development” in the SFHA and will require new and substantially improved buildings to be protected from flooding.



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Next Steps -St. Clair & Madison Counties

- St. Clair and Madison County-wide *Preliminary* DFIRMS will soon be distributed
- FEMA (in cooperation with the St. Louis District and the State of Illinois) wants to meet with community officials and levee owners for each of the two county-wide mapping efforts in September to develop outreach strategies:
 - Emergency response
 - Flood Insurance
 - Floodplain Management



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Public Safety is key

FEMA and USACE will work together to assure those living and working behind levees clearly understand their flood risk

- Understand that they have an important role to play in reducing risk, property damage and loss of life
- They need accurate information – to have the opportunity to make sound risk management decisions
- If/when risks change, FEMA will update maps to reflect current level of risk



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For More Information

FEMA Web site – one-stop source for materials designed to inform both public and technical audiences at:

www.fema.gov/plan/prevent/fhm/lv_intro.shtm

Engineers working with Illinois mapping and levees:

Lee Traeger
312-408-5538
lee.traeger@dhs.gov

Bob Murdock
312-575-3946
robert.murdock@mapmodteam.com

Terry Reuss Fell, Chief
Floodplain Management & Insurance Branch
FEMA Region V
312-408-5587



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